

Amendments to the Claims

1. (Currently amended) A method of thermally processing a substrate in a reactor comprising a radiant heat source, comprising the steps of:

disposing a substrate to be thermally processed on a front side thereof facing downwardly to form features therein with a back side opposite said front side facing said radiant heat source; and

pyrometrically monitoring including receiving radiation radiantly emitted from said front side of said substrate.

2. (Original) The method of claim 1, wherein said thermally monitoring step includes measuring temperatures at a plurality of radial positions relative to a center of said substrate.

3. (Currently amended) A method of thermally processing a substrate in a reactor comprising a radiant heat source, comprising the steps of:

disposing a substrate to be thermally processed on a front side thereof to form features therein with a back side opposite said front side facing said radiant heat source, wherein said disposing includes supporting said substrate with a peripheral fixture including an annular shelf contacting the substrate and extending under the substrate around its center but no further inward than an edge exclusion zone of said substrate; and

thermally monitoring said front side of said substrate.

4. (Original) The method of claim 3, wherein said edge exclusion zone has a width of no more than 3mm.

5. (Previously presented) The method of claim 3, wherein said substrate is disposed with

said front side facing downwardly.

6. (Canceled)

7. (Previously presented) The method of claim 1, further comprising reflecting heat emitted from said front side of said substrate back to said front side across a radiation cavity.

8. (Currently amended) A method of thermally processing a substrate in a reactor comprising a radiant heat source in opposition to a reflector extending parallel to a surface of said substrate and facing said surface over substantially all of said substrate, comprising the step steps of:

disposing a substrate to be thermally processed on a front side to form features therein with said front side facing downwardly and towards said reflector and a back side of said substrate opposite said front side facing said radiant heat source, whereby said reflector reflects radiant energy produced in said substrate by said radiant heat source and emitted from said front side back to said front side; and

pyrometrically monitoring a plurality of positions on said front side including receiving radiation radiantly emitted from the plurality of positions.

9 – 12. (Canceled)

13. (Currently amended) A thermal processing apparatus, comprising:

a radiant heat source for directing radiant energy downwardly;

means including an annular ring for holding a wafer on an annular surface of the annular ring and with a back side thereof of the wafer facing said radiant heat source, a front side of said wafer opposite said back side being processible in said thermal processing apparatus to form features on said front side, wherein said holding means overlaps said front side only within an edge exclusion zone of said wafer; and

a reflector disposed on a downward side of said wafer to reflect back to said front side radiation produced by said radiant heat source and emitted from said front side, wherein said radiant heat source is disposed above said reflector.

14. (Previously presented) The apparatus of claim 13, wherein said edge exclusion zone extends no further than 3mm from an edge of said wafer.

15. (Previously presented) A thermal processing apparatus, comprising:
a radiant heat source for directing radiant energy downwardly;
means including an annular ring for holding a wafer with a back side thereof facing said radiant heat source, a front side of said wafer opposite said back side being processible in said thermal processing apparatus to form features on said front side;
a detachable holding member capable of holding said wafer from a top side thereof; and
a reflector disposed on a downward side of said wafer to reflect back to said front side radiation produced by said radiant heat source and emitted from said front side, wherein said radiant heat source is disposed above said reflector.

16 – 29. (Canceled)

30. (Currently amended) The method of claim 3, wherein the step of thermally monitoring includes pyrometry including receiving radiation thermally emitted from the front side.

31. (Previously presented) The method of claim 3, wherein the shelf is a sloping shelf.

32. (Currently amended) A thermal processing apparatus, comprising:
a radiant heat source for directing radiant energy downwardly;
means including an annular ring for holding a wafer with a back side thereof facing said

radiant heat source, a front side of said wafer opposite said back side being processible in said thermal processing apparatus to form features on said front side, wherein the ring includes a sloping annular shelf for supporting the wafer; and

a reflector disposed on a downward side of said wafer to reflect back to said front side radiation produced by said radiant heat source and emitted from said front side, wherein said radiant heat source is disposed above said reflector.